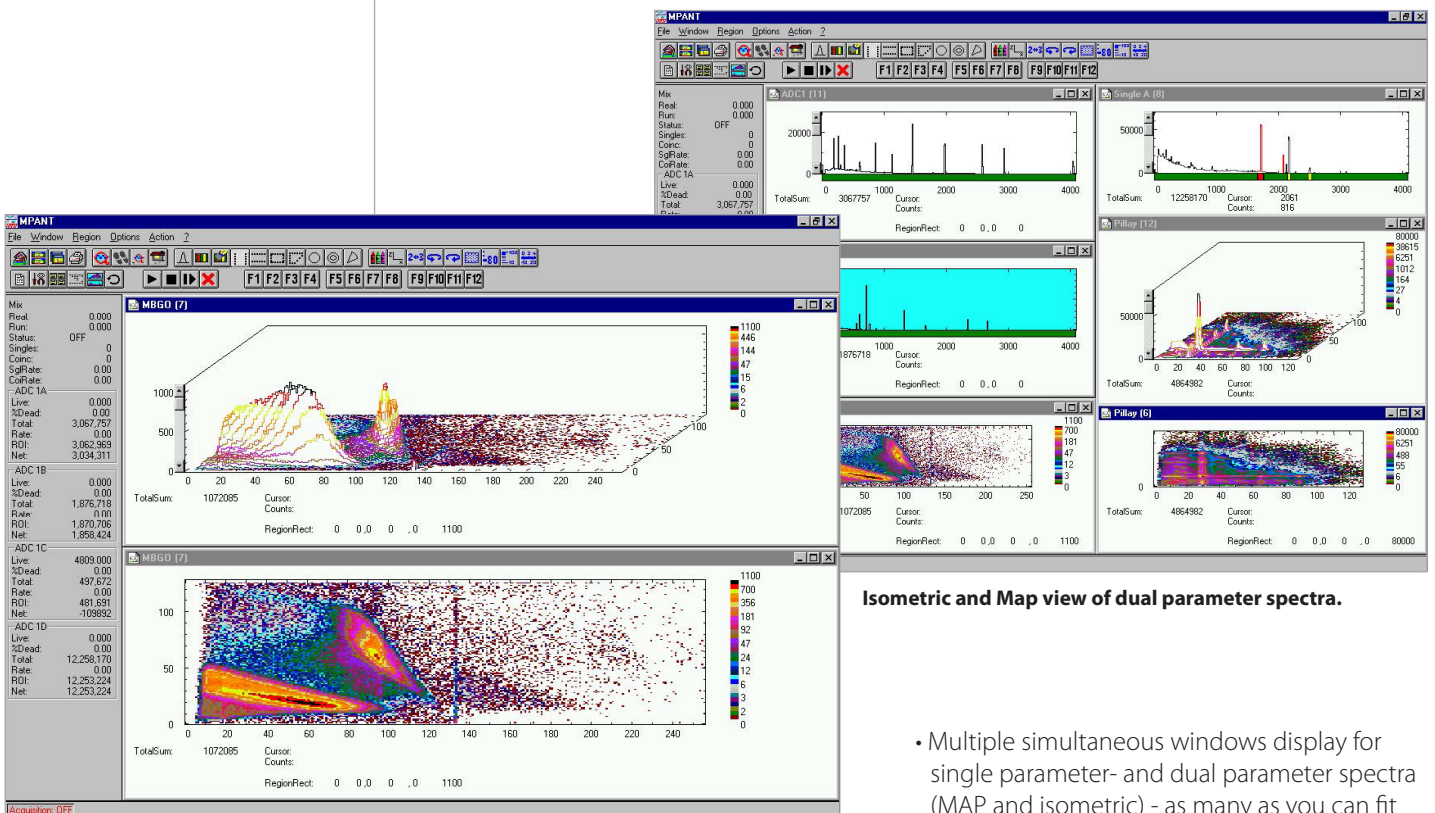


MPA-NT



Isometric and Map view of dual parameter spectra.

Features

- MS-WINDOWS based operating software for the MPA-3, MPA4, MPA4T Multiparameter Systems and MCS6 / MCS6A.
- WINDOWS graphical environment for control and spectrum manipulation via mouse and function keys
- Supports up to 16 input ports (ADCs, TOFs etc) for MPA3 and up to 3 MPA4(T) or MCS6(A) modules with each 6 TOF and 8 ADC inputs
- Livetime correction for each ADC input
- 1 ms time marks in ADC list data stream
- Time can be a parameter in a multiparameter spectrum
- Time stamp facility with optional Real-Time-Clock (RTC), MPA-3: 50 ns, MPA4: 6.4 ns resolution
- Spectrum Multiscaling capability using the Auxiliary inputs
- Multiple simultaneous windows display for single parameter- and dual parameter spectra (MAP and isometric) - as many as you can fit on your screen
- Display selection bar with Zoom, ROI Shape, Gauss-Fit, Calibrate, Lin/Log display, and other functions
- Automatic operation through MACRO commands
- Hardcopy output to any Printer or Plotter supported by MS-WINDOWS
- Peak centroid, Gauss Fit, net area and gross area calculation
- Energy calibration
- External Control by host computer via RS232C, TCP/IP (optional) and Experiment Control Line input
- Documented DLL interface with examples for LabVIEW and Visual Basic (optional)
- Example Spectrum
- Choice of disk storage formats. File formats compatible to various spectrum analysis programs
- Optional Replay software

Description

MPA-NT is a powerful - yet easy-to-use Multi-parameter Emulation software that operates under the MSWINDOWS environment. It offers full software control of the MPA-3, MPA4(T) Multiparameter systems and MCS6(A). Spectra from up to 16 input devices for MPA-3 or from up to three MPA4(T) or MCS6(A) modules with each up to 8 ADC and up to 6 TOF inputs can be displayed in single parameter- and dualparameter format. The resolution of the dualparameter arrays are limited only by the available RAM in the used computer as well as the resolution of the monitor. A practical limitation is 4k x 4k which requires approx. 67 MB of RAM space for each such spectrum.

There are two modes of operation:

LIST-Mode with on-line monitoring

The list mode performance exceeds all presently available multiparameter list systems as list-data can be stored continuously at data rates of up to 6,000,000 events/s for MPA-3 and 15,000,000 for MPA4(T).

Histogramming Mode

Spectra can be histogrammed in single- or dualparameter modes while simultaneously writing (or not writing) a list file. Any combination of ADCs or other input devices can be

selected. It is possible to display a dualparameter spectrum of two ADCs and simultaneously each single parameter spectrum as well.

MPA-NT is compatible to many spectrum analysis programs such as:

GANAAS, QXAS, OSQ, SAMPO, ALPS, MEDIGAM, GAMMAW and many others. An optional DLL provides easy control and data transfer to LabVIEW, Visual Basic etc.

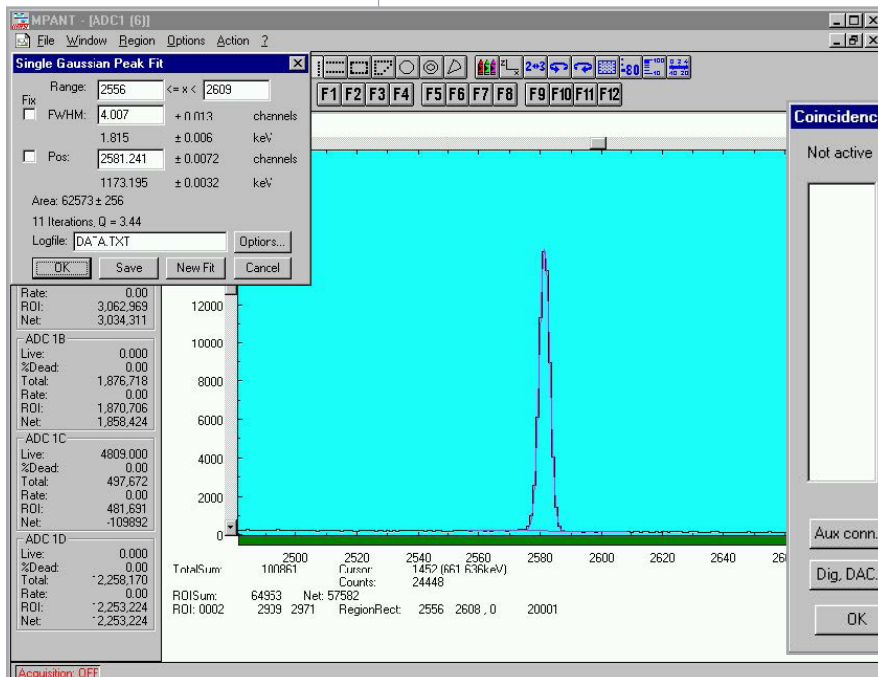
MPA-NT can be fully remote controlled by a host computer via RS232C communication and in a Local Area Network (TCP/IP protocol, optional) using MPA-NT commands, or by an Experimental Control Line.

MPA-NT has all capabilities to inspect and evaluate the data: Opening new windows, zooming and scrolling, creating and deleting ROI's, Net and gross integration, calibration, Gaussian peak fit etc.

Region of Interest (ROI)

ROIs are defined using the right mouse button and dragging a rectangle over the region. In dualparameter displays in addition polygonal, circular, annular and pie shaped ROIs are possible. The actual ROI can be selected in a single spectra by clicking on the ROI bar, or it can be advanced in any spectra using the + and - keys from the numeric keypad. The ROI boundaries, total and net sum is displayed below the display. The background is calculated as a linear function from the right- and leftmost channel. The ROIs can be edited in a dialog box and are saved together with the data.

Gaussian peak fit



Coincidence definition dialog

Description

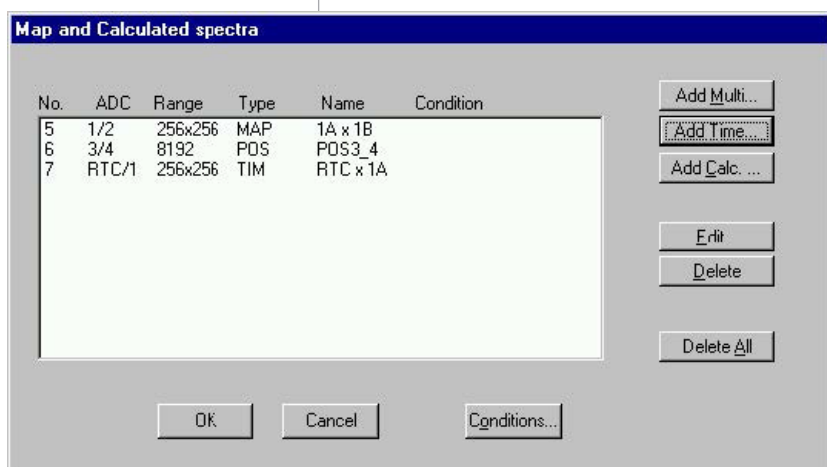
Calibration

You have a choice of several calibration formulas. Enter some cursor positions or press the „fit“ button to enter the result of the last Gaussian fit and the corresponding values, click Add, then Calibrate. The obtained coefficients can be inspected together with the statistical error, or they can be changed and entered by hand. If, use calibration' is on, the calibrated values are displayed together with the channel position of the cursor.

normalized chi2 and for all values also the standard deviations are given. The results can be dumped to a logfile with a specified name. The information in the logfile can be defined. The file can be read with standard spread-sheet programs like EXCEL. With Fit ROIs, a Single Gaussian Peak Fit is performed for all ROIs and the results are dumped to the logfile. „Auto Calib“ performs a Gaussian fit for all ROIs where calibration energies were entered and makes a new energy calibration from the results.

Batch Operation

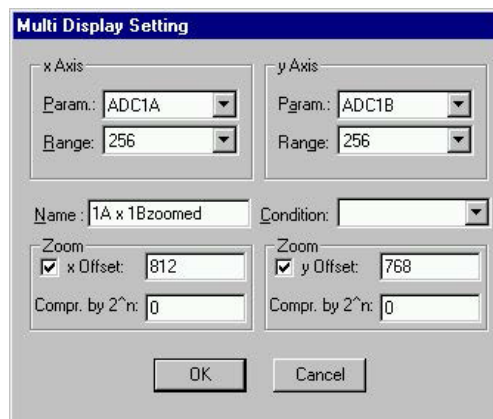
MPA-NT has extensive MACRO capabilities. By using these MACROS the user can fully automate his measurements. The command language is interpreted by the server program.



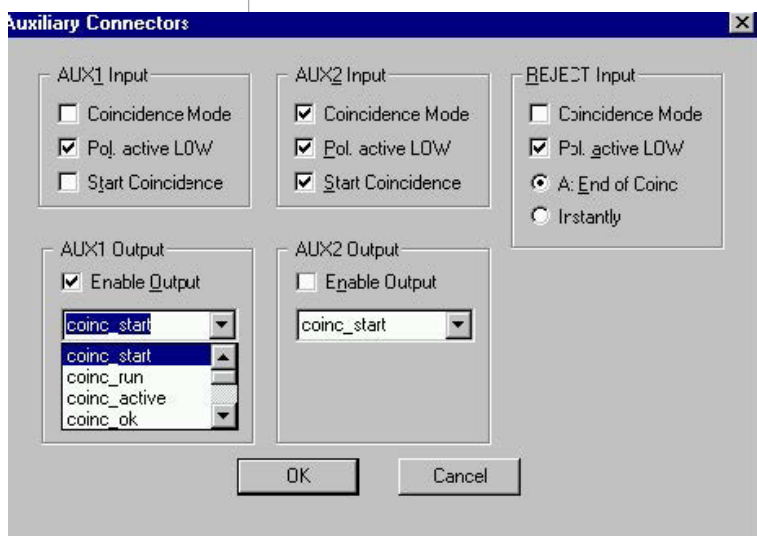
List of calculated spectra

Gaussian Peak Fit

A single Gaussian peak fit with linear background can be performed for the active region. The fitted curve and background is displayed and a dialog box shows the results: The position and FWHM are displayed in channels or in calibrated units, if a calibration has been made. The area of the Gaussian is also shown. The



Dualparameter spectra settings



Auxiliary connector settings

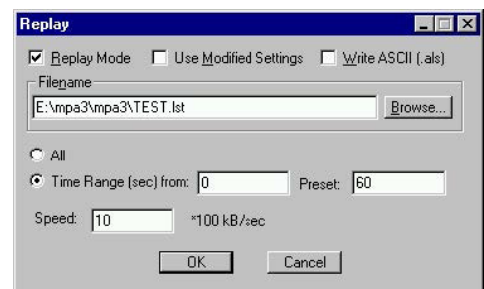
Software upgrades are free after the purchase of a MPA-NT system. To download the latest version please register in our website for your user code and password.

Features

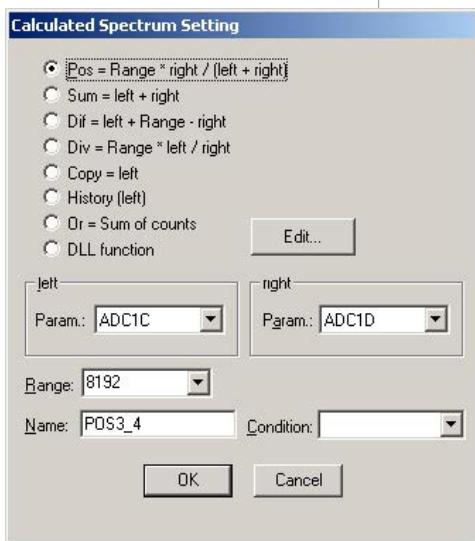
- Extended MPA-NT software for off-line analysis of data files recorded in LIST-Mode on the same computer – Model MPA-3Rplay / MPA4RPlay
- Extended MPA-NT software for off-line analysis of data files recorded in LIST-Mode operating on an alternate computer - Model MPA-3RPlay_Ex and MPA4RPlay_Ex (no MPA-3 or MPA4(T) hardware installed)
- Enables to define new dual parameter spectra, zooms, mathematical calculations, and set new conditions on events within region of interests.

Description

MPA-3 / MPA4(T) Replay is an optional software module to evaluate and analyze list files off-line, recorded with the MPA-NT software. It is included in the software delivered with a MPA system but must be enabled either by a USB key module or inside the MPA base module. There are two versions: the Replay that operates on the same computer as the MPA system and External Replay for operation on an alternate (remote) computer.



Replay Settings dialog



Calculated Spectrum Setting

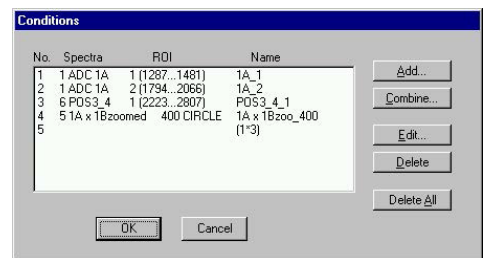
The replay program is easy to use:

enable Replay Mode using the checkbox in the Replay Settings dialog and specify a Filename of a list file (extension .LST) or search one by pressing Browse... With the radio buttons it is possible either to choose the complete list file by selecting All or a selected Time Range.

To Use Modified Settings enable the corresponding checkbox, otherwise the original settings will be used. To start Replay press Start in the Action menu.

In Replay mode it is possible to define any new dual parameter spectra, also zoomed, and calculated spectra: Press Add Calc from the Map and Calculated

Spectra dialog to define a new calculated single spectrum in the Calculated Spectrum Setting dialog. Any such calculated spectra can be used as a parameter for a dual parameter spectra. Conditions on events within any ROIs can be defined and selected as a necessary condition for incrementing a channel in another spectra.



List of Conditions

The following versions are presently available:

Order Information		
Model	Description	Order No.
MPA-3 RPlay	Replay Software for MPA-3	MP3S02
MPA-3 RPlay_Ex	ReplayEx Software for MPA-3	MP3S04
MPA4RPlay	Replay Software for MPA-4	MPA4S5
MPA4RPlayEx	ReplayEx Software for MPA-4	MPA4S6
MPA4RPlay+Ex	Replay and ReplayEx Software for MPA-4	MPA4S7